

## THYMUS GLAND TREATMENT OF CANCER.\*

A PRELIMINARY REPORT WITH A PRESENTATION OF A CASE OF INOPERABLE  
CANCER WITH GREAT RELIEF OF SYMPTOMS.

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THE case herein reported was referred to me by Dr. A. E. Isaacs of this city on April 1, 1907. The essential history of the case is as follows:

Mrs. B., aged forty-eight. Married. Noticed the first appearance of a cancer in the left breast in 1899. She was operated on by Dr. Ellsworth Eliot, Jr. A second operation was performed by Dr. Eliot in June, 1906. A recurrence seems to have taken place immediately after, and she was treated for about three months by X-rays without result.

About two or three months ago she noticed the disease had involved the supraclavicular glands on the same side. She eventually consulted Dr. Isaacs who considered it to be an inoperable case and referred the patient to me.

At her first visit, which was on April 1, 1907, I found the following conditions:

1. Pain in the shoulder region, in the arm, and in the breast region and sear, so great as to prevent sleep at night.

2. One or more glands just above the breast sear. A matted mass of glands beneath the clavicle, filling and bulging the sub-clavicular space.

A mass of glands above the clavicle with several isolated glands in the neck region. The supraclavicular mass was about the size of a hen's egg, matted together and painful to the touch.

Several glands in the right side of the neck and some of considerable size in the right axilla.

3. The shoulder and arm showed marked swelling extending

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\* Paper read and case presented at the meeting of the New York Surgical Society on Wednesday, May 8, 1907.

to the dorsum of the hand which was puffy. The patient was disinclined to move the arm from sense of weight and pain.

Treatment was begun on the date mentioned and continued until April 25, 1907. The patient within forty-eight hours reported diminished pain and ability to sleep. The swelling of the glands, shoulder and arm began to subside and she moved and used her arm more freely.

On April 27, 1907, her temperature, which had been normal until then, shot up to 102 degrees F. and continued elevated until May 4, 1907, reaching at times as high as 104 degrees F. It subsided and became normal on the date last mentioned. A peculiarity noticed was that the pulse was at no time above 90 and always of good character.

During the fever she had pain, at times intense, at the free border of the ribs on the left side, and the spleen seemed moderately enlarged. She was confined to her bed. During this time the patient was cared for by Dr. John Block, whose treatment was mainly observation. Quinine was given in doses of 20 grains a day without effect. Salol was being administered during the last days of the fever.

During the period of fever, about nine days, there was continued diminution in the size of the glands.

She has been free from fever since May 4, 1907, nearly free from pain, is slowly regaining her appetite and strength, and to-night shows, of all the different masses of glands, only two slightly enlarged above the left clavicle and two above the right. The swelling of the arm and shoulder region has disappeared. The amount of reaction is shown by her weakness and a loss of 10 pounds in weight in ten days. In verification and as additional testimony, I herewith give a letter just received from Dr. Isaacs:

NEW YORK, May 7, 1907.

Dear Doctör Gwyer:

I have seen Mrs. B— today and report herewith the results of my examination:

The practical disappearance of the supraclavicular glands is the most notable feature, as the enlargement of and pain in these glands was the most prominent symptom when you began your treatment. You will recall that at that time they formed a visible mass, about the size of a small chicken's egg to the feel, with a more or less boggy infiltration of the adjacent tissues. This mass has practically entirely disappeared, with the small reservation I will mention later. I want to remark here the conditions on

my previous examination, while she was under your treatment and before her attack of fever. At that time, the previously existing bogginess had disappeared, the tumor itself had reduced to about half its original size, and in place of the homogeneous oval-shaped mass previously felt, there could now be appreciated three distinct enlarged glands almost separated from one another. To go back to the present condition, the small reservation I want to make as to the entire disappearance of the mass, is that there is yet to be felt on deep palpation, behind the clavicle, some small irregularities that give the impression to the palpating finger that they might be the broken down remains of some of the glands; they have not the smooth feel and globular outline usual to enlarged lymphatics.

The next feature of note is the entire disappearance of the cedema, pain and general loss of function of the arm, forearm and hand. There is now practically no difference between the two upper extremities, whereas previously the cedema, etc., were quite marked.

The character of the tissues on the anterior chest wall, above and below the sear and in the axillary space, is markedly changed. Whereas it was hard and brawny before, almost pitting on pressure, with some infraclavicular and axillary glands indistinctly palpable, and skin immovable on underlying chest wall, it is now soft and normal with no swelling and no appreciable glands.

The supraclavicular gland on the opposite side is yet palpable but decidedly smaller than it was. The woman is quite weak, I suppose as the result of her recent severe and protracted spell of fever, but she is gradually recovering her strength. There is quite some tenderness yet on pressure over the parts which had been affected, especially where there seems to be any remains of the process, as in the supraclavicular regions on both sides.

Very truly yours,

A. E. ISAACS.

It is not claimed that the patient is yet cured, but it may be fairly claimed, I think, that the cancerous process has been arrested and its clinical evidences greatly reduced. And there is ground to hope for the ultimate cure of the patient.

Treatment will not be resumed until the patient is strong enough to stand another period of autointoxication and elimination.

The treatment given in this case, and in others to be touched on, was the thymus gland, either dried and ground to powder, or as a watery extract of the nucleoproteids and other elements. The dose of the powder varied from one to four drams three or four times a day, with sodium phosphate half an ounce once a day for eliminatory purposes. Meat was

permitted sparingly, but milk, eggs, starches, sugars and some fats were allowed in the diet.

In addition to the above case I have another, of X-ray burns of the hands, in which cancer developed and was repeatedly removed, which I have treated intermittently for the last year. There has been no return of the disease, the color of the skin has become normal, its resistance to irritation increased, and the precancerous changes which were so noticeable during the previous five years have not reappeared.

Another case, from Drs. Hotchkiss and Hawkes, cancer of the penis, with recurrence in the groin, a hopeless case, had received morphine as desired; after treatment with thymus was begun, the patient was fairly free from pain and the growth showed a decided diminution before his death.

Another case, from Dr. Tilton, cancer of the larynx, with secondary involvement of the neck glands, inoperable, showed under treatment a marked diminution in size of the glands. Breathing was so bad the patient was sent in to Bellevue for immediate tracheotomy. He improved so much under thymus treatment that tracheotomy was not performed until a month later when, and owing to a streptococcus infection occurring, his trachea filled with pus and debris and he eventually succumbed. He too was fairly free from pain after medication was begun. Dr. Tilton permits me to state that he considered the reduction of the glands very remarkable.

Another case, from Dr. W. G. Thompson, cancer of the rectum, inoperable, has been under treatment for six days. Before treatment, morphine was administered for pain which was great. Since treatment was begun there has been no pain and an examination to-day by Dr. Frink my house surgeon, and myself, shows a diminution of the growth as evidenced by a larger lumen, and a slightly greater mobility of the mass. The patient feels well and sits up in bed.

Another case, from Dr. Hitzrot, adenocarcinoma of the breast, operation by Dr. Bolton, recurrence in the supraclavicular and other glands, has just been started on treatment and in four days the glands of the neck show a slight reduction and

the marked oedema of the upper extremity and which extends to the dorsum of the hand, is softer than it was. She reports that half an hour after taking each dose of thymus there is a feeling of fulness amounting to an aching pain in the affected regions; this feeling lasts from one to one and a half hours. Another symptom, one which I have observed in other cases, is that while her appetite is good, it is more easily satisfied.

Another case, from Dr. Isaacs, removal of the breast, recurrence in the supraclavicular glands, inoperable, improved under treatment while it lasted. The patient was impatient and uncontrollable and the case was under observation but a short while.

Of course I fully recognize that the treatment in these cases has been too brief to demonstrate anything except the local improvement which has taken place during it, and I mention them only to show that improvement, to illustrate certain associated features, and it is hoped as a basis for subsequent report.

I have used the dried thymus gland of the calf, and also a watery extract of the gland containing the nucleoproteids and an amylolytic enzyme. This enzyme, which is in quantity and powerful, seems not to have been discovered before, as I can find no record of it in my extensive reading. It will be taken up further in a future communication.

The glands were received fresh, fat removed, cut up and dried at a low temperature by a forced draft of air; then ground and sifted to a uniform powder. This was administered stirred in water about an hour before meals.

The watery extract may be prepared from the dried gland as follows:

To eight ounces of a solution of sodium chloride (four grains to the ounce) add a dram of the dried powder, and a little thymol. Frequently agitate for one hour. Strain and filter as rapidly as possible. After filtering twice, acetic acid 50 per cent. C.P. is added, using a 20 per cent. solution, with stirring, until a point of acidity is reached which gives good

flocculi on standing a minute or two. The precipitate is separated by filtration and redissolved in a solution of sodium carbonate (three-quarters of a grain to the ounce of water), using about one and a half ounces of the solution. This solution is filtered twice, and to it is added acetic acid to acidity and good precipitation.

The precipitate is again separated by filtration and redissolved in a solution of sodium carbonate (one grain to the ounce of water), using two drams of the solutions and adding thymol. This final solution is filtered three times or more and with a crystal of thymol will keep good in a refrigerator for an unknown time. Each dram of the solution represents the products from half a dram of the dried gland. The process for the production of an ounce of the extract takes about six hours. Distilled water should be used and the solutions kept cool during manipulation.

This solution I have given by mouth and by hypodermic in doses up to one dram. Hypodermically it shows no tendency to cause local irritation.

As this is merely a preliminary paper, it is not my desire at this time to give my theory as to the cause of cancer, nor why I consider the thymus gland should be supposed to be effective in the treatment of cancer. The theoretical side of the question and my experimental work will be given in a future paper.

I would keep to the practical side and may say that I have found the use of the thymus gland in cancer will produce the following results:

1. Diminish or eliminate pain.
2. Diminish the size of the growth.
3. Its use is followed by better digestion, by more regular action of the bowels, and improvement of the general condition as evidenced by a clearer skin and eyes, greater energy, and a general sense of health and well being.

I have some reason to hope that the use of the thymus gland will have a wider range of action than in the treatment of cancer and will include sarcoma and some other new

growths, and some diseases due to faulty metabolism or senility.

The only use of the thymus gland in the treatment of disease of which I can find any record is, its use first by Mikulicz with some success in the treatment of goitre.

Too much care cannot be used in the selection of the thymus glands, and in the preparation of the powder and extract; at a later date I will give further particulars on this subject.

The dosage is still experimental and a great deal of care must be exercised in its administration, for I have reason to believe that it is a very powerful agent. I would advise the greatest caution in its use and at present can only give general directions to that end.

It would seem that the amount of action and reaction depends on the amount of diseased tissue and its situation.

I have taken as large doses for as long a time as I have ever given them, with nothing but good results. This might represent the non-cancerous or slightly cancerous type.

In the case shown, the diseased tissues were in quantity and without ulceration, and all elimination was of necessity through the emunctories. The dose in such a case should be small and the patient carefully watched. It is possible that once the disintegration is started, it may get beyond our control and I can imagine a case with such an amount of cancerous tissue to be eliminated, that under treatment an autointoxication of such severity might ensue as to prove fatal.

I think it necessary to utter this warning because in the two fatal cases, Hotchkiss's and Tilton's, with the rapid reduction of the tumor coincided a rapid loss of strength and an early death which suggested a suddenly increased toxæmia.

Cases of surface cancer and especially those which are ulcerating seem to stand more medication with greater safety.

It is very necessary that, during treatment, every help be given towards elimination: The bowels kept slightly loose by phosphate of soda, the kidneys active by plenty of fluids, and the skin active by frequent baths.

I would still advise operation in all operable cases. Also in so-called inoperable cases, for the removal of as much diseased tissue as possible, so that there will be a minimum amount to be absorbed and eliminated. Such a course will not only be safer but will I think shorten treatment and give greater chance of success.

I think it will be found that the rapidity of cure will be in direct proportion to the rapidity of development. Skin cancer and others of slow growth will be slow of cure. The more rapidly growing cancers will be more rapidly cured but with correspondingly greater reactions and dangers during treatment.

I think the treatment offers much to those with small cancers, to those with moderate amount of cancer who absolutely refuse operation, and to many of those with cancers classed at present as inoperable and incurable and which have not been helped by other means. Every case treated so far has been considered as beyond operation and beyond hope of cure.

It is right that I should be somewhat enthusiastic regarding this method of treatment, but I would urge the importance of slow judgment as to its merits and only ask that it be tried and that it be not condemned because it fails to cure every case, and particularly those cases in which the disease is very extensive, and the vitality very low; such cases in short as are likely to be the majority of those first offered for treatment because of the impracticability of subjecting them to operation.

I anticipate that many cases will show improvement but eventually die; but with increased experience with the treatment we can, I think, prognose with some degree of certainty.

No fee has been charged the patients treated and they have understood that the result of treatment was problematic.

As the preparations are not yet on the market,<sup>1</sup> and the

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<sup>1</sup> Upon inquiry I find that there are two firms who have had preparations of the thymus gland in the market for some time. I have not tried these preparations.



work is still experimental, I would be glad, within the limits of my time, purse, and facilities, to receive and treat any cases which members of this society are good enough to send me; the proviso being that the patients accept the treatment and its results and report back to those sending them, at stated intervals.

NOTE.—Since the above paper was read before the New York Surgical Society, criticisms have been made that its publication would be premature, that it would be inferred that I presented a case as cured by thymus treatment, and that I presented the treatment as a positive cure for cancer.

If the paper is read carefully I think it will be found to contain no such claims. I do not claim to have cured a case as yet, nor do I as yet know that the thymus treatment will cure cancer.

The paper is a preliminary report of my work with the thymus gland; it gives the actual results so far obtained, and I consider my presentation of it warranted. My object is to bring the subject to notice and to offer it as an invitation to further investigation by clinicians and laboratory workers.